Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) 1. An isolated polynucleotide encoding an *alpha*-farnesene synthase.

2. (Previously amended) A polynucleotide as claimed in claim 1 wherein the polynucleotide encodes a polypeptide comprising at least one repeat of DDXXD and LNNDLGTSAAE, wherein X is any amino acid.

3. (Currently amended) An isolated polynucleotide as claimed in claim 1 having the sequence of SEQ ID NO:1 or a fragment or variant thereof wherein the fragment or variant encodes ~~encodes~~ a polypeptide with *alpha*-farnesene synthase activity.

4. (Original) An isolated polynucleotide as claimed in claim 3 wherein the sequence has at least 70% identity to the nucleotide sequence of SEQ ID NO:1.

5. (Original) An isolated polynucleotide as claimed in claim 3 wherein the sequence has at least 90% identity to the nucleotide sequence of SEQ ID NO:1.

6. (Original) An isolated polynucleotide as claimed in claim 3 wherein the sequence has at least 95% identity to the nucleotide sequence of SEQ ID NO:1.

7. (Original) An isolated polynucleotide as claimed in claim 3 wherein the nucleotide sequence is that of SEQ ID NO:1.

8. (Original) An isolated polynucleotide encoding the polypeptide of SEQ ID NO:2 or encoding a variant or a fragment of that sequence which has *alpha*-farnesene synthase activity.

9. (Original) An isolated polynucleotide as claimed in claim 8 wherein the polypeptide has at least 70% identity with the amino acid sequence of SEQ ID NO:2.

10. (Original) An isolated polynucleotide as claimed in claim 8 wherein the polypeptide has at least 90% identity with the amino acid sequence of SEQ ID NO:2.

11. (Original) An isolated polynucleotide as claimed in claim 8 wherein the polypeptide has at least 95% identity with the amino acid sequence of SEQ ID NO:2.

12. (Original) An isolated polynucleotide as claimed in claim 8 wherein the polypeptide has the sequence of SEQ ID NO:2.

13. (Original) An isolated *alpha*-farnesene synthase polypeptide.

14. (Original) An isolated *alpha*-farnesene synthase having the sequence of SEQ ID NO:2 or a fragment or variant thereof with *alpha*-farnesene synthase activity.

15. (Original) An isolated *alpha*-farnesene synthase as claimed in claim 14 wherein the amino acid sequence has at least 70% identity with the sequence of SEQ ID NO:2.

16. (Original) An isolated *alpha*-farnesene synthase as claimed in claim 14 wherein the amino acid sequence has at least 90% identity with the sequence of SEQ ID NO:2.

17. (Original) An isolated *alpha*-farnesene synthase as claimed in claim 14 wherein the amino acid sequence has at least 95% identity with the sequence of SEQ ID NO:2.

18. (Original) An isolated *alpha*-farnesene synthase as claimed in claim 14 wherein the amino acid sequence is a mature sequence derived from SEQ ID NO:2.

19. (Currently amended) A genetic construct comprising a polynucleotide of claim 1. ~~any one of claims 1 to 12.~~

20. (Currently amended) A genetic construct comprising in the 5'-3' direction an open reading frame polynucleotide encoding a polypeptide of claim 13.~~any one of claims 13 to 18.~~

21. (Original) A genetic construct as claimed in claim 20 further comprising a promoter sequence.

22. (Original) A genetic construct as claimed in claim 21 which further comprises a termination sequence.

23. (Original) A genetic construct as claimed in claim 22 wherein the sequence of the encoded polypeptide has the amino acid sequence of SEQ ID NO:2 or a fragment thereof with *alpha*-farnesene activity.

24. (Currently amended) A genetic construct comprising in the 5'-3' direction a polynucleotide which hybridizes to a polynucleotide encoding a polypeptide of claim 13. ~~any one of claims 13 to 18.~~

25. (Original) A genetic construct as claimed in claim 24 further comprising a promoter sequence.

26. (Original) A genetic construct as claimed in claim 25 which comprises a termination sequence

27. (Original) A genetic construct as claimed in claim 26 wherein the sequence of the encoded polypeptide is has the amino acid sequence of SEQ ID NO:2 or a fragment thereof with *alpha*-farnesene activity.

28. (Currently amended) A vector comprising a genetic construct of claim 19. ~~any one of claims 19 to 27.~~

29. (Currently amended) A host cell comprising a genetic construct of claim 19. ~~any one of claims 19 to 27.~~

30. (Currently amended) A transgenic plant cell which includes a genetic construct of claim 19. ~~any one of claims 19 to 27.~~

31. (Original) A transgenic plant comprising a plant cell as claimed in claim 30.

32. (Currently amended) A method of preparing *alpha*-farnesene comprising the steps of

(a) culturing a cell which has been genetically modified with a polynucleotide of claim 1 ~~any one of claims 1-12~~ to provide increased *alpha*-farnesene synthase activity;

(b) providing the cell with farnesyl diphosphate if necessary; and

(c) separating the *alpha*-farnesene produced.

33. (Original) A method for modulating the *alpha*-farnesene production of a plant, the method comprising: increasing or decreasing expression of *alpha*-farnesene synthase wherein said increasing or decreasing is achieved by genetic modification to alter the expression of a gene encoding an *alpha*-farnesene synthase .

34. (Original) A method as claimed in claim 33 wherein the polypeptide comprises a polypeptide with the sequence of SEQ ID NO: 2.

35. (Currently amended) A method for modulating *alpha*-farnesene production in a plant, the method comprising of :

(a) introducing into the plant, a genetic construct of claim 19, ~~claims 19-27;~~ and

(b) transcriptionally expressing the polynucleotide in the plant.

36. (Currently amended) A method for modulating *alpha*-farnesene production in a plant, the method comprising of

(a) introducing into the plant, a DNA genetic construct of claim 19, ~~claims 19-27;~~ and

(b) expressing the polypeptide in the plant.

37. (Original) A polynucleotide having at least 15 contiguous nucleotides from SEQ ID NO: 1

38. (Original) A method of selecting a plant with altered *alpha*-farnesene content comprising the steps of:

(a) contacting polynucleotides from at least one plant with at least one polynucleotide comprising at least 15 contiguous nucleotides of the polynucleotide of claim 1 to assess the expression of *alpha*-farnesene synthase; and

(b) selecting a plant showing altered expression.

39. (Original) A method as claimed in claim 35 wherein the polynucleotide has at least 15 contiguous nucleotides from SEQ ID NO: 1 and the plant is an apple plant.

40. (Currently amended) A method for preparing *alpha*-farnesene comprising:

(a) obtaining a polypeptide as claimed in any one of claim 13, ~~claims 13-18~~; and

(b) incubating farnesyl diphosphate in the presence of the polypeptide, and

(c) separating the *alpha*-farnesene produced.